Feb. 3, 1959 C. M. HARTER 2,871,934

VENETIAN BLIND STABILIZER

Filed Nov. 13, 1956

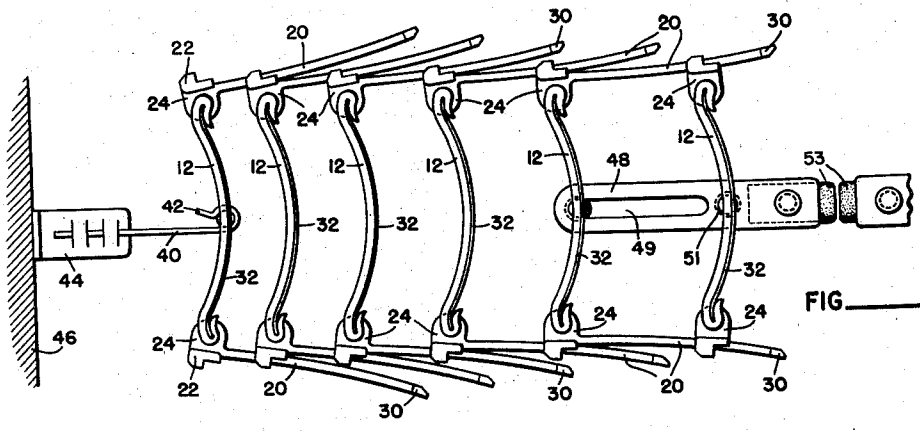


FIG. 1

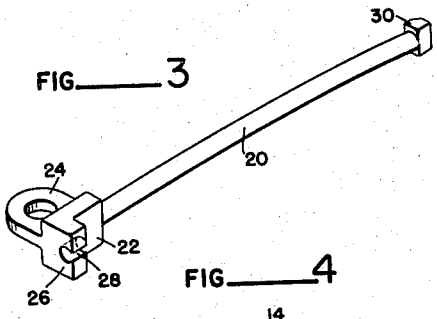


FIG. 3

FIG. 4

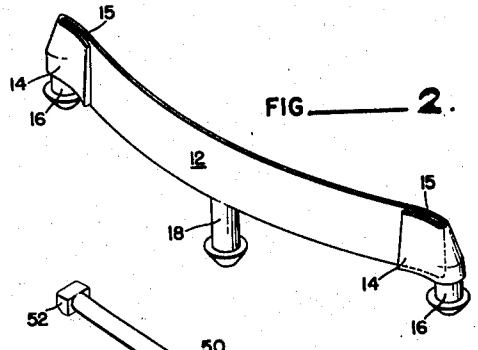


FIG. 2.

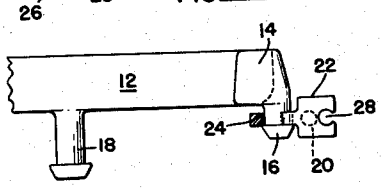
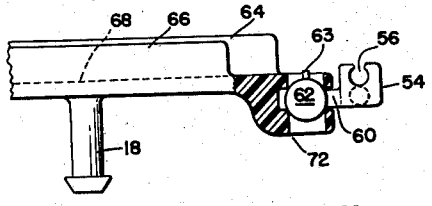


FIG. 8



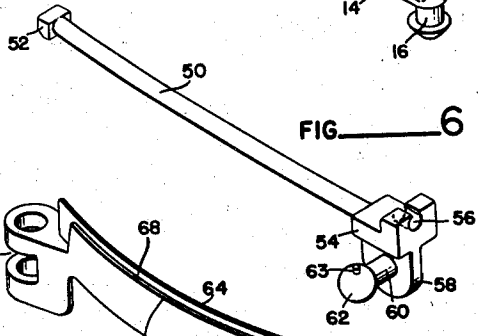


FIG. 6

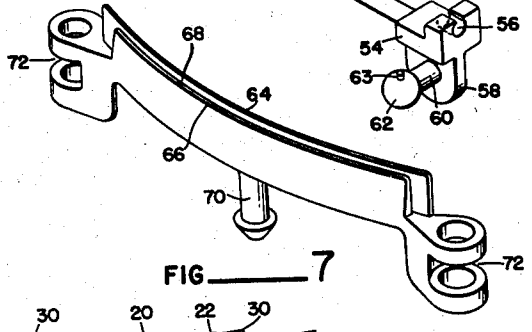


FIG. 7

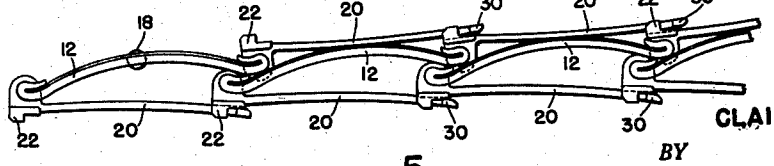


FIG. 5

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VENETIAN BLIND STABILIZER

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6 Claims. (Cl. 160—173)

This invention relates to a Venetian blind stabilizer and, more particularly, to a stabilizer for the lower ends of vertically hanging slats of an upright type slatted blind.

Among the paramount objects of this invention have been the provision of multiple grip or multiple contact stabilizing means for the lower ends of the blind slats: to prevent independent swaying or rippling; to keep the slat ends spaced apart to maintain uniformity of appearance top and bottom as when the slats are packed or separated, but also when the blind is only partially extended; and to operate progressively in either direction of movement in a chain fashion irrespective of slat spacing.

Other objects include providing a stabilizer capable of low cost production, simple to assemble and to install, and which is durable as well as easily maintained and cleaned as required over extended periods of use.

In the drawings:

Figure 1 is a top plan view of my stabilizer as attached with vertically hanging Venetian blind slats, the same being shown in cross-section;

Figure 2 is a perspective view of a preferred form of anchor member used in my stabilizer;

Figure 3 is a perspective view of a link used in connection with the anchor member of Figure 2;

Figure 4 is a fragmentary view of the stabilizer anchor-link assembly, with portions broken away or omitted for clarity;

Figure 5 is a top-plan view as in Figure 1 of a closed Venetian blind equipped with my stabilizer;

Figure 6 is a perspective view of a modified link including a ball joinder member;

Figure 7 is a perspective view of a modified anchor member adapted to couple with the link of Figure 6; and

Figure 8 is a fragmentary view, similar to Figure 4, of the modified anchor-link assembly of Figures 6 and 7.

The anchor member **12** shown in Figure 2 comprises a blade having reversely formed ears **14** at each end. Enlarged head pivot pins **16** depend from blade **12** at its ends. An intermediate depending pin **18** is also shown. Ears **14** form slat jaws **15**.

The link of Figure 3 comprises shank **20** having head **22** which includes the perforate pivot ear **24** and guide member **26**, here shown as having an open jaw **28**. The outer end of shank **20** carries enlargement **30** which serves as a stop member.

Preferably the anchor members and links are formed of molded plastic material such as, for example, nylon or one of the polyethylene compounds. Resilience and flexibility are desired in these elements, as well as minimum weight, ease of cleansing, and durability.

Referring to Figure 4, it will be seen that the eye of perforate ear **24** is snapped over the enlarged head of pin **16** to provide the desired pivotal connection. In this case pivoting is about a vertical axis so that link **20** may swing in a horizontal plane.

In Figure 1 the hanging slats **32** of a vertical Venetian blind are shown as they would appear when partially

drawn to the screening position. Slats **32** are shown as arcuate although it will be understood they may be flat as well. Each slat has an anchor member **12** fitted on and secured to its lower free end, the slat being tightly gripped in the multiple-grip jaws **15**, **15**. This arrangement involving gripping the slat at two or more points at the bottom or free end insures rigidity in the stabilizer in its control over the movement of the slat ends. Each anchor member has a link **20** secured as in Figure 3 to each end. The shank of each link **20** is slidably inserted into jaw **28** of the next adjacent link whereby a chain of links is assembled. By this assembly it will be seen that the vertically suspended slats forming the blind have two parallel, spaced apart, extensible-contractible chains of links extending horizontally along the lower end of the blind.

This invention is not concerned with the manner by which slats **32** are suspeded from overhead or the manner or means by which the slats are spread or closed, or racked to the position of Figure 5. Suffice it to say that the slats are drawn from the pack by force applied overhead to move them to the screen position and centrally of the opening in a progressive manner. Under such circumstances slat **32** (to the right in Figure 1) moves until enlarged heads **30**, **30** on the first pair of links **20** engage with the edges of the respective jaws in which the link shanks are slidably positioned. Thereafter each slat is progressively picked up and drawn from the pack.

I have discovered that sliding of the links is facilitated by outwardly curving the shanks of links **20** as shown in Figures 1 and 3. In general, this arcuation should be such that the shanks curve outward of the jaws **28**.

As shown in Figure 1, the pins **18** may be employed variously to equip the blind with attachments. To insure a loose anchoring of the blind at its end having relatively little movement, a pin **40** having crook **42** is snapped to pin **18**. The shank of pin **40** may frictionally be secured by a clip **44** attached to an adjacent wall or frame member **46**. At the other end of the plurality of slats, a link **48** having slot **49** and port **51** is snapped over the pins **18** of the adjacent anchor members. Link **48** carries a magnet which may cooperate with another similar magnet **53** or a piece of iron material on another blind to hold the inner blind end stabilized.

This apparatus beneficially functions to stabilize the Venetian blind at the lower ends of the slats by preventing independent swaying or rippling of the slats as when drafts or breezes pass over the blind. The stabilizer also serves to keep the separated as well as closed slat ends spaced apart to maintain uniformity of appearance.

During spreading or closing of the slats, the stabilizer links function progressively as the slats separate or close together. At all times, however, they provide the stabilizing functions mentioned irrespective of slat spacing.

Referring to Figure 6, link shank **50** having stop enlargement **52**, is provided with a modified pivot head **54** which includes upwardly open jaw **56** and depending bar **58**. Pin **60** with ball-end **62** stands outward on one side of ear **58**. This provides a lateral axis of pivot.

The modified anchor member of Figure 7 has a pair of blades **64**, **66** forming the walls of a groove **68** which receives the lower end of blind slat **32**. Pin **70** depends intermediate the ends of blades **64**, **66** which also carry a pair of vertically spaced perforate pins **72** at each end. The ball **62** of pin **60** snaps into jaws **72** for pivotal movement about an upright, but not necessarily vertical, axis. The pivoting is that of a ball and socket assembly. Pin **63** in ball **62** abuts the walls of the adjacent jaw member **72** and serves to limit pivoting to a degree.

Link shank **50** is curved as described before. The

curve is generally away from the jaw **56** but in this instance is upward instead of outward. The curves of shanks **20** and **50** permit overlapping of links and facilitate extension or contraction of the link chain.

Figure 5 shows the arrangement of the preferred form of stabilizer as it appears when the blind slats are racked to their closed or light tight position. It will be noted that the stabilizer operates as an articulated parallel mechanism and that the link chains close together with racking of the slats and associated anchor members.

In certain installations it may be desirable to avoid the outward flare of the links **20**, as shown in Figure 1. In that event the assembler merely applies the links to the pins **16** in opposite order. That is the upper chain of links of Figure 1 are then arranged on the lower rows of pins **16** and, conversely, the lower chain of links of Figure 1 is applied to the upper rows of pins **16** of the blind. In such assembly the links in the packed position overlap toward the bottom center of the slats **32** and inward of the anchor members **12** rather than outward as illustrated. This arrangement does not alter the function of the stabilizer and it does not change the combination of elements involved.

In the described alternate assembly arrangement, the curvature of the links is of course inward of the blind. However, it will be noted that the curved link shank has the same relation to the jaw which receives as before described.

It will be apparent to those skilled in the art that changes and modifications can be made in various details. Those which fairly fall within the spirit and scope of the invention as defined in the subjoined claims are considered covered thereby.

Having thus described my invention, I claim:

1. A stabilizer for the lower end of a Venetian blind having vertically suspended rigid blade slats, comprising: two parallel, spaced apart, series of telescopically connected rigid links at the lower terminals of said hanging slats and extending horizontally of said blind; an anchor member traversing the lower terminal of each slat and having a jaw groove to frictionally receive the slat end; means forming an upright pivotal connection between each link and an anchor member at the ends thereof; and means on each link cooperable with the next adjacent link to serially limit the extension of said series.

2. A stabilizer for the lower end of a Venetian blind having vertically hanging rigid blade slats, comprising: two telescopic series of rigid links each disposed at a lower corner of said blind and extending horizontally thereof an anchor member traversing the lower terminal of each slat and having a jaw groove to frictionally receive the slat end; means forming a pivotal connection between each link and an anchor member at the end

thereof; a jaw on each link to slidably engage the next link and form a telescopic connection between said links; and means on each link at the end opposite its pivotal connection to a slat and cooperable with the next adjacent link to serially limit the extension of said series.

3. A stabilizer for the lower end of a Venetial blind having vertically suspended rigid blade slats, comprising: means on the lower terminal of each slat forming a pair of spaced apart depending pivot horns; a slide link having a perforate pivot ear pivotally mounted on each said horn; each of said links having a guide eye, the shank of the next adjacent slide link being slidably disposed in said guide eye; and means to limit withdrawal of said link from said eye upon horizontal separation of said slats; said links forming two spaced apart telescopic semi-rigid chains whereby to dampen swaying and rippling of said slats in drafts.

4. A stabilizer for the lower end of a Venetian blind having vertically hanging rigid blade slats, comprising: an anchor member grooved to be received and frictionally secured to the lower terminal end of each slat; a pair of juxtaposed elongated cylindrical links disposed between each adjacent pair of anchor members; each link having a pivotal connection to an outer end of an anchor member; each link having a restricted-mouth guide jaw adjacent said pivotal connection to receive the shank of the next adjacent link for telescopic action and including means to limit extension of each link relative its guide jaw.

5. A stabilizer for the lower end of a Venetian blind having vertically suspended rigid blade slats, comprising: two parallel, spaced apart, telescopic chains to extend horizontally along the lower edge of said blind; each element of said chain including wall means forming a transverse channel between said chains to receive the lower end of a blind slat and including a pivot horn at each end; a rod-like link pivotally associated with each said horn and extending unidirectionally therefrom in overlapping relation to a next adjacent link; and guide means on each link to receive such an overlapping link for sliding movement.

6. The structure according to claim 1 in which the means forming an upright pivotal connection between each link member and an anchor member comprises a ball and socket connection.

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